

CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-6 (canceled)

Claim 7 (currently amended): A device for protecting an electronic module (μC , C , T , $T2$) disposed in a control device (ST) in a multi-voltage on-board electrical system ($12V/42V$) having an accumulator ($BAT1$) with a low on-board electrical system voltage (V_{bat1}) against short circuiting to a high on-board electrical system voltage, comprising:

a MOSFET transistor ($T1$) having a drain source path ($D-S$) inserted between a control device connection (A , $A1$, $A2$) and a connection (E , $E1$, $E2$) of the electronic module (μC , C , T , $T2$), and with:

a source (S) connected to the connection (E , $E1$, $E2$) of the electronic module (μC , C , T , $T2$);

a drain (D) connected to the control device connection (A , $A1$, $A2$); and

a gate (G);

a Zener diode ($D1$) connected between said gate (G) and said source (S) of said MOSFET transistor ($T1$);

a gate resistor (~~R_g~~) connected between said gate (~~G~~) of said MOSFET transistor (~~T_1~~) and a positive pole (~~$+V_{bat1}$~~) of the first accumulator (~~$BAT1$~~); and

a diode (~~D_2~~) connected in parallel with said gate resistor (~~R_g~~), for conducting current in a direction from said gate (~~G~~) to the positive pole (~~$+V_{bat1}$~~) of the accumulator (~~$BAT1$~~);

wherein when a short circuit to the high on board electrical system voltage is conducted to said drain, said MOSFET transistor turns on or remains turned on.

Claim 8 (currently amended): The device according to claim 7, wherein said electronic module is disposed in control device (~~ST~~) for controlling low-power consumers or for processing/transmitting data.

Claim 9 (currently amended): The device according to claim 7, wherein said Zener diode (~~D_4~~) is configured with a breakdown voltage (~~V_z~~) lower than a maximum permitted gate source voltage (~~V_{gs}~~) of said MOSFET transistor (~~T_1~~).

Claim 10 (currently amended): The device according to claim 7, wherein said MOSFET transistor (~~T_1~~) has a threshold voltage (~~V_{th}~~) and, in an event of a short circuit to a highest voltage of the on-board electrical system active at the device connection (~~A, A_1, A_2~~), a source voltage (~~V_s~~) of said transistor (~~T_1~~) is limited to a value $V_s = V_{bat1} - V_{th}$, where V_s is the source voltage, V_{bat1} is

the low on-board voltage (~~V_{bat1}~~), and V_{th} is the threshold voltage of said transistor (~~T1~~).

Claim 11 (currently amended). The device according to claim 7, wherein, on occurrence of a short circuit to a highest voltage of the on-board electrical system active at the device connection (~~A~~, ~~A1~~, ~~A2~~), said diode (~~D2~~) connected in parallel to said gate resistor (~~R_g~~) limits the gate voltage (~~V_g~~) of said MOSFET transistor (~~T1~~) to a value $V_g = V_{bat1} + V_d$, wherein V_g is the gate voltage, V_{bat1} is the low on-board voltage (~~V_{bat1}~~), and V_d is a conducting state voltage (~~V_d~~) of said diode (~~D2~~).

Claim 12 (currently amended): The device according to claim 7, with the protective circuit (~~S_e~~, ~~S_{ea}~~, ~~S_{eb}~~) integrated in an ASIC.

Claim 13 (original): The device according to claim 7, wherein the multi-voltage on-board electrical system is a motor vehicle on-board electrical system.